REMARKS

This responds to the Office Action mailed on October 19, 2005. The specification has been amended to update the priority to include the issued patent number for Application No. 09/801,265.

Claims 4 and 5 are amended, claim 6 is canceled without prejudice or disclaimer, and no claims are added; as a result, claims 1-5, 7-8, 15-29 and 43-52 are now pending in this patent application.

As an initial note, Applicant reserves the right to later swear behind any § 102(e) references, such as provided under 37 C.F.R. § 1.131.

§102 Rejection of the Claims

1. Claims 1, 3 and 6 were rejected under 35 U.S.C. § 102(e) for anticipation by Srinivasan (U.S.6,274,479). Applicant respectfully traverses this rejection.

Srinivasan apparently discloses a undoped insulator layer 22 deposited over a semiconductor feature 12, and having an iso-electronic doped insulator layer 24 deposited and reflowed over the undoped insulator layer 22. Iso-electronic is defined in Srinivasan to "mean having the same valence characteristics as silicon so that the dopant will not electrically affect the silicon substrate" (see col. 4, lines 24-27 and figures 5 and 6). Srinivasan give examples of an iso-electronic dopant, with germanium being used in the examples, and carbon and tin listed as possible dopants, but not as viable. The iso-electronic germanium doped layer 24 is then reflowed to smooth the topography.

The Office Action asserts that Srinivasan discloses a first and a second deposition rate for the two different insulator layer 22 and 24. Applicant respectfully disagrees. Applicant respectfully submits that Srinivasan provides no disclosure regarding the deposition rate. Applicant also respectfully disagrees with the statement on page 3 of the outstanding Office Action on line 4 that the cited reference discloses "facet-etching the oxide layer to reduce the severity of any trenches in the oxide layer overlaying gaps between metal feature in the metal layer (see figure 6, 10 and 11)." Applicant believes that the only etch discussed in the cited portions of Srinivasan is the spacer etch forming the spacers 22/24 in its figure 7.

Applicant respectfully submits that the cited reference does not disclose or suggest at least the claimed features of "*...forming a metal layer having a predetermined maximum feature spacing ... facet-etching the oxide layer ...*", as recited in independent claim 1. The cited reference does not disclose a feature of having a predetermined maximum feature spacing, and does not discuss a facet etch to smooth the surface.

The dependent claim 3 is seen as in patentable condition at least as directly depending from a base claim shown to be patentable over the cited reference. Claim 6 has been cancelled without prejudice or wavier of patentable content. In view of the above discussion, Applicant respectfully requests that this rejection be reconsidered and withdrawn.

2. Claims 1, 3 and 6 were rejected under 35 U.S.C. § 102(e) for anticipation by Shields et al. (U.S.6,087,724). Applicant respectfully traverses this rejection.

Shields apparently discloses using a liquid HSQ dielectric 53/63 between the metal lines 51/61, and flattening the layer by use of CMP polishing (col. 6, lines 15-30). The top surface of the HSQ dielectric is nitrided by means of a nitrogen plasma (ammonia may also be used) to form layer 64, which slows the etch rate of the HSQ dielectric in the via etch (col. 6, lines 31-44). The planarized HSQ layer is covered with a TEOS based dielectric layer 54/65 with is also planarized by CMP polishing prior to the via etch

Applicant cannot find any disclosure in the cited portions of Shields relating to facet-etching any of the dielectric layers. Applicant respectfully requests that the Examiner provide a more particular indication of the basis for the Office Action's assertion (in paragraph 5, 11th line) that facet etching is disclosed in Shields. Applicant submits that Shields apparently discloses forming a HSQ based oxide layer 63 on the metal layer 61, and then forms a TEOS based oxide layer 65 on the HSQ layer 63.

Applicant respectfully submits that the cited portions of Shields do not disclose or suggest at least the claimed features of "*...forming an oxide layer on the metal layer using a TEOS-based procedure ... facet-etching the oxide layer...*", as recited in independent claim 1.

Dependent claim 3 is believed patentable at least as depending from a patentable base claim, as discussed above. Claim 6 has been cancelled without prejudice or disclaimer. Therefore, Applicant respectfully requests reconsideration and withdrawal of this rejection.

Allowable Subject Matter

Claims 7-8 were allowed. Applicant thanks the Examiner for the indication of allowable subject matter.

Claims 4-5 were indicated to be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Accordingly, Applicant has amended claims 4 and 5 to be in independent form and including the entirety of base claim 1, and requests that these claims be allowed.

Request for Re-Introduction of Previously Withdrawn Claims

Applicant submits that claims 44, 45, 46 and 47, which depend from allowed claim 7, which were withdrawn in the election dated August 1, 2005, should now be allowable. Applicant submits that claims 48 and 49, which depend from allowed claim 8, which were withdrawn in the election dated August 1, 2005, should also now be allowable. Applicant respectfully requests re-entry and allowance of such claims.

CONCLUSION

Applicant respectfully submits that the claims are in condition for allowance, and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney at (612) 373-6951 to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

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Date January 19, 2006

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CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: Mail Stop Amendment, Commissioner of Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 19 day of January, 2006.

KATE GANNON
Name

Signature